

FROM OUT OF 'THE ASHES' RISES

>>>> *Exit @Live Alive!* <<<<

The Times/Stclair NorthAmerican User Groups Newsletter

Times/Stclair NorthAmerican User Groups

Andover, Indiana

Volume 2, Number 3

Fall 1992

ROUTINES	MEMORY MAP	ADDRESS
T/SMUG Chairmen		1
T/SMUG Information		2
Exit @Live Alive! Article Contributions		2
Contributors to this issue		2
From the Chairman's Desk		2
TREASURY NOTES		4
From the Editor's Desk		4
INPUT/OUTPUT		5
NEWS ITEMS		10
ITEMS AVAILABLE FROM T/SMUG		11
SPECIAL DEALS AND BOTS		13
LIBRARY		13
Articles:		
THE STATE-BACK RS-68 MCGEN		13
MINERAL OIL and the PRINTER SCREEN		14
MINERAL OIL and the EDGE CONNECTOR		14
RESISTING TRACK 0 and other TREASING		15
WRITING MORE EFFICIENTLY		16
Ads		19
And how a word from our Readers		21
2X-91 TEN YEARS LATER !!		23

T/SMUG CHAIRMEN

Here is the list of 1992 T/SMUG Chairmen and how to contact them. We wish to support the following SIGS: I280/EX81, 888, SPECTRUM/TS3068/TC2048 and QL. If you have questions about any of these fine machines contact the Chairman.

POSITION	NAME	PHONE	PRIMARY FUNCTION
Chairman	Don Lambert	219-823-1372	Chief Motivator
Vice-Chairman	Dave Bennett	717-714-7531	CATS/888
Vice-Chairman	D.G. Smith	814-835-6998	TRAP & JLD Library
Vice-Chairman	Ed Sawe	407-380-5124	EX81 TAPE Library
Vice-Chairman	Bob Cowen	503-855-7484	COATS
Vice-Chairman	Mod Humphreys	804-931-5509	WOLG/TS3068
Vice-Chairman	Rob Swager	708-837-7453	Newsletter/888 Symp
Treasurer	Abel Refals	708-885-4333	CRUG/Cash Tracker

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Exit @Live Alive!

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1

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T/SNUG Information

EXile QLive Alive! is the newsletter of T/SNUG, the T/MSA/Winclair NorthAmerican User Groups, providing news and software support to the T/S community in at least four newsletters per year.

It is our goal to build a Public Domain software library and develop a list of available software for all T/S machines showing the source.

Vendors have free space in this newsletter which they receive free of charge so they may see we are still out here. If you feel T/SNUG should perform other tasks, let us know your feelings.

T/SNUG wishes to have one chairman from every T/S user group who will take charge of sending us their groups newsletter and other correspondence.

We encourage your group to copy this newsletter and distribute it at regular meetings to all of your members. If you can't copy this newsletter, perhaps we can provide a disk with the articles on it for use in your newsletter.

Articles appearing in this newsletter can be obtained by downloading this newsletter from our MSB.

You can keep T/SNUG alive for an annual contribution of \$18.00 made payable to Abed Kahlia. Send check to:

ABED KAHALIA
218 Olive Alley Newsletter
335 W NEWPORT RD
HIGHTSTOWN NEWJERSEY 08520

Tele: 609-385-4337

EXile QLive Alive! **Article Contributions**

If you would like to contribute an article to the newsletter, upload a file to our MSB called

TNSUG.LST . If you have an AD for the newsletter UPLOAD a file called TSNUG.ADS. If you have NEWS to POST about your group, UPLOAD a file called TSNUG.NWS .

If you need help contact the MSOP by E-MAIL on the T/SNUG MSB, mail or by phone:

BOB SWOGER
613 PARKSIDE CIRCLE
STREAMWOOD IL 60157-1647

It is preferred you call:
630/637-7337 or 630/376-8068

If you can only contribute hard copy, tape or disk format, send your inputs to:

DON LAMBERT
EXile QLive Alive! Newsletter
1201 KESINGER PL
AUBURN IN 47006

Please call 318-925-1972 before sending articles.

CONTRIBUTORS TO THIS ISSUE

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Dave Bennett
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Gill Parrish
Hugh Polley
Joseph Ruppelle
Bob Swoger, MSOP

FROM THE CHAIRMANS DISK

**HARDWARE, SOFTWARE, UTILITIES &
DOCUMENTATION/INSTRUCTIONS OR
SINK OR SWIM**

These thoughts were developed out of attempts to download files from Bob Swoger by modem to me which often resulted in defaults. I believe that a lot of the difficulty is that I do not have the necessary information to do the task properly. I also know that in the past I have had a time or two during voice communications that I have had some strange clicks and noises which could

have resulted in defaults in downloading by modem.

By information I am referring to documentation (which could be in the software in the form of HELP! files) which usually gets into the technical aspects of the hardware/software but which does not help the first time user of the particular hardware/software. Also by information I am also referring to the particular key punches and what results from the key punches as instructions. Some documentation does include instructions but usually in a very shorthand version. So now we have two sets of information, 1. documentation (which usually gets into the theory of the hardware/software) and 2. instructions (which describes in very specific terms how to use the hardware/software).

I have had problems in the past that included the screen going blank and I sit there wondering if the program had quit or should I wait or should I reload the program. It is nice when the instructions state "after pressing ENTER the screen will go blank for about 20 seconds and then the MENU will appear and then you can make your choice of --" It is very helpful if the instructions do tell you what the screen shows. If you are supposed to get a minus sign in the top left corner of the screen say so.

Telephone instructions are helpful but not as good as something on paper. I have never compared the ability of holding the telephone and writing and besides what is said often is misunderstood. On paper with all key punches and the results of the key punches make for very good instructions.

I can remember my first attempts to use a word processor. I had ended up with copious notes of how to do each of the many things that one could do. And I eventually got

to the place where the notes are no longer needed. The same applies to any new hardware/software I get involved with. I don't know what others do to get started with something new but I am cautious and like to progress slowly. I have some software that defaults and I don't know if it is my fault or the software.

An example of the differences between documentation and instructions is the Larker Disk Drive manual. I had a disk that was AUTOSTART on an 80 track disk. My 80 track disk was drive #1. But pressing ENTER when powering up would only access drive 0. I batted around the problem for quite a while and one night while my wife was in Japan I woke up in the early morning hours (3 AM) and I had the answer in my mind. It seemed stupid but I got on a robe and went to the computer and fired up and entered "RAND USR 100: GOTO 1" "ENTER" and then "RAND USR 100: New" and then "ENTER" and lo and behold the 80 track drive kicked in and the disk AUTOSTARTED. Nowhere in the documentation does it actually state that is the way to do it but it is buried in the GOTO command explanation and the NEW command explanation. I know. I know that it reads that way but for someone reading the documentation looking for it will find it hard to find the way it is stated. Just a case of not understanding what is in the documentation. And after I did successfully get the problem solved it was months before I finally read the documentation and understood what it meant.

Ideally there should be documentation for those that want the information and also specific instructions for those that do not grasp the full importance and how to out of the documentation. And the two forms of information should be separate. When I am using the software I don't care that it is taking the data at address

0000000 and transferring it in reverse order at address 0000000 and then adding it to the square of address 0000000. But I do care that to get the material to SAVE to disk I need to press the "Q" key and then enter the file name not to exceed three characters and to expect a 15 second SAVE after I press "ENTER".

Donald S. Lambert, Chairman
TIMES/Blackbir NorthAmerican
User Groups

TREASURY NOTES

As of December 1, 1982, we have a balance of \$887.87 from 7 groups and 36 individuals.

Abad Bahalo, Treasurer
TIMES/Blackbir NorthAmerican
User Groups

FROM THE EDITORS DESK

Though what Chairman Don has to say in his column about manuals has a great deal of validity, I just love it when he gives us a chance to editorialize and make us all think a little. So put on your thick hide, Don, because here it comes!

Al Perry says "A manual can't make you read it". Don seems to be one of those people who reads a manual but doesn't absorb/comprehend it. On page 9 of the LK002 manual Larry Perry states: "if you plan on distributing some software that is on LK002 disks, using disks formatted as single sided will be compatible on more systems than double sided disks. (48 TPI is most common)." And for this reason on page 10 of the same manual Larry states: "All software on disk from Larkem Electronics will be supplied on single sided 40 track disks unless requested otherwise."

Don KNOWS I use only single sided double density (HDDO) disk drives and that to read any other format I must borrow a drive from a friend somewhere and go thru the hassle of

converting the disks to HDDO format. Anyone with HDDO drives can easily send out HDDO disks! Yet Don, a LogiCall owner, keeps sending me HDDO formatted disks that DO NOT have LogiCall on them!

In paragraph 4 of his column he states a problem he had trying to BOOT a disk in drive one. Page 3 of the LogiCall manual says: "Press 'M' <ENTER> to activate AUTOSTART" Don, LogiCall on the Larkem system is NOT optional! It should be on all Larkem disks! The LogiCall way to boot an AUTOSTART in drive #1 is to hold the ENTER key down on system boot-up and then hit 'I' and then 'M' and ENTER. Just hit 7 or 8 at the "DRIVE" or "Program" prompt to see why!

Don tried to remember what he hears on the phone instead of taking notes, we are all guilty of it from time to time. This is why I found it impossible to upload a program to him over the phone, (Paragraph 1). He couldn't handle his side of the data transfer although there were just a few instructions I gave him to follow.

Some manuals are too verbose and poorly organized, what Don really needs along with his manual is a quickie card.

In Don's defense, on the software side, we programmers often write programs with no help files and when the program leaves a blank screen for a long period of time, we forget that maybe getting a flashing "MOVING" on the screen to give the user a feeling of security! Just because we write programs doesn't mean we can write manuals, so thanks for the input, Don. I will be sending you a new LogiCall manual to try.

Now is the last issue of EMir Olive Alive! we started a MODERN series and I wish to keep it going. This time I wish to take the BYTE-BACK modem because there are still some to be had for the T81548. I don't

feel this is the only modem and software you should have but you should have one for your collection. Read the article.

Bob Swager, Editor
TIMES/Weekly NorthAmerican
User Groups

INPUT/OUTPUT

Ken Krack writes: Dear Mr Lambert, I have just seen the T/SMUG Newsletter for the first time (please see copy of letter to Abed Khaled) and I appreciate its broader coverage than any 'local' T/S group . It should do a good job in maintaining interest in what I consider to be these masterly friendly computers, I even got the local county college to let me do the assignment work on a course in "BASIC" language on a TS2040 printer and left everybody else behind struggling with C "Syntax Error". I would like to make a suggestion for what I find to be a long felt need and which can embrace the whole membership of all grow s through the T/SMUG Newsletter, namely a section in the Newsletter for "PROJECT INTERLINK" By which members/groups interested in developing a particular project can liaise together by exchange particularly of T/S technical knowledge, worthwhile projects, apart from being useful in themselves, will certainly help to keep the T/S interest flowing and growing particularly if project progress (and stumbling blocks) is reported regularly in the newsletter. We might also be able to produce a "T/S Computers Specialists Directory" of those willing to help others, for example I could be entered as specializing in 'plant data logging and alarming by T8808' The following could be taken as an example (and on which I am just on starting)-

PROJECT INTERLINK

A member of the SM A Sinclair user group wishes to develop a FAE interface for the TS2040. Technical help is particularly needed in out putting pixels (i.e. screen dump) and signal compression. preferences to relevant articles/publications would also be appreciated. The developed design would be put into "public domain" through the T/SMUG newsletter. Please contact:-

Ken Krack c/o Virginia Pavlik
RD1, Dick Station
Irwiss, PA 15642
Tel 412 446-3321
FAX c/o 412 832-9733

Alvin Ronald Albrecht writes: Dear Don, Has T/SMUG folded? I'm crossing my fingers that it hasn't but I haven't received a newsletter since Fall 1991. If I owe another year's dues, please let me know. If it has folded and if there is still some interest I'd be glad to help restart it with some articles or whatever is needed. Hoping to hear from you soon. Alvin

Be assured, Alvin, T/SMUG is still healthy, perhaps the mail system got very slow or else some other event happened but I am forwarding the letter to Abed and I have written to you.

Dave Bennett writes: It is nice to hear from you again. I didn't really have any 288 articles for Mr Klave Alive! I have been writing about the 288 for five years and I am running out of ideas. However I did write a short article describing a method of transferring files between the 288 and the TS2068 without the use of a Null Modem.

I would bet your inquiry came from Jay Shepard. He has called me several times asking questions including one about transferring files to the TS2068. I had advised Jay to use two modems. Jay did mention he had to connect to the phone jack in order to get this to work with his modems. I did not

have to do this with my two Hayes modems.

I have a Macintosh Classic as well as a 286 and a Gt. Bob Swoger uses Macintosh SE at work. Even though it would be easier to send the file directly to Bob on a Macintosh disk I decided to send the article on a PC disk again. Then you can add your comments if any. I was not too sure of the particulars on the T22268 side in this procedure.

Rugh Pollay writes: I would like to receive your TIMES newsletter. Find enclosed a \$12.00 US POSTAL money order, payable at any post office. The extra postage money is to cover my expense in sending your newsletter to Canada.

I would like to improve my QL by adding EPROMs and a disk drive system and by making it IBM compatible if possible. Any information you can send me is such an effort would be much appreciated!!

Rugh A. Pollay
81-645 Macarthur Rd. NE
Calgary, Alta.
CANADA T2E 6A9

Mark Binetock writes: Thanks for your 3/26 letter concerning your adventures with the 288i & AEMCO Drives. I enjoyed your letter thoroughly. I have two 288i/AEMCO setups, both quite sophisticated.

One is single sided double density, 18 pages on one side. By adding a notch plus punching two holes in the disk's jacket, (called FLIPPERS) I can use both sides of the disk by manually flipping the disk to get 20 pages per disk. I have used this scheme successfully since the early to mid '80s. At that time double density was a big deal, double sided rare and not affordable.

My second unit is a little newer & is 288B. It will read & write to single sided disks formatted on my first unit, an advantage to a page oriented

filling system. Both systems will SAVE/LOAD BASIC, machine code and data files. Both are also equipped with Bill Bell's 288B.

The 288B are used primarily to calculate model rocket programs/flight profiles, manage the club's data base, word processing (I'm on a place now, therefore a handwritten letter), income taxes, balancing the checkbook etc.

Unit two has a remote keyboard. The rest of the computer is in an overhead cabinet. It is equipped with twin drives, 80 column printer, HAYES board, 64K RAM & CAL 40 column printer & stringy floppy (predecessor to disk drives). It is also equipped with "remote" switches for reset, to switch the stringy floppy/disk drives in and out, switch printers, etc. I have also made integral modifications to accommodate the remote keyboard, better machine code handling, improved power supply etc.

Unit 1 is similar however uses a home made 8K RAM Board, 40 column T22040 printer, 80 column thermal printer & byte back modem. The modem used to access electronic mail with my work. This unit also has remote switches & internal modifications.

I almost purchased a Lantec board, but didn't. How does it compare to the AEMCO? Are they still available? Where?

I also use a rather sophisticated & well equipped QL, another story in itself.

I recently purchased for \$5 an as is 288i that works. I plan to build SE battery backed RAM & Input/Output "relays". I plan to use it to control & monitor lighting in my house, using Radio Shack "wireless" light switches etc. The light switches send "tones" through the power lines.

As you can see, my 28's are both well equipped & well used.

Its advantages over the QL are its simplicity, I can repair or modify it plus it's easy to program.

The QL on the other hand is much faster (very noticeable with complex number crunching), superb graphics. A more sophisticated word processor plus the ability to run IBM programs.

My mainstay & favorite is still the ZX81.

I have written to a man in England who has a program that will allow the QL or IBM to run ZX81 programs. I am exploring this as it is a way to keep the ZX81 alive. I. e. transfer its "soul" to other hardware. It will also allow me to "use" my ZX at work, on the P. C. I have successfully transferred ZX files -> QL -> IBM. I look forward to doing the same w/ programs.

Thanks for all your news.

Mort Minotock writes again: I finally have some time to myself, unfortunately another plane trip. Everything's OK. I've also formatted the wrong disk myself. Memorial day I make you another copy. (Refers to a disk he sent me and I wiped out when I FORMATTED it by mistake for the ZX81 and lost the AERCO ZX81 single sided 48 track 800K program-Dont).

I primarily use Memotext on AERCO. I like it as it is fast & has word wrap. My second is (or was) WORD 800K. Its more powerful plus can do many FONTS. Now a days, when I need more horsepower, I use the QL.

Don't worry about sending money, I'm OK & prefer to keep our new relationship informal. I suspect trades etc. will eventually even out in the wash --- & if not, that's OK too.

I'm an engineer currently doing marketing. The product is a real high tech computer, reminiscent of the CKT controls

used in the bridges of StarTrek & StarWars movies. Work, unfortunately, is a meat shop, one deadline after another. I am reaching the age, with luck, that I could retire in a few years. I'll cross that bridge when it comes.

How do you like retirement? Your work at Collins sounds interesting. I enjoyed your tales of inspecting parts now in orbit. Also, meeting astronauts must have been exciting.

Original 5 1/4 disk drives were single density, i.e., only 80K on one side, 160K if it was double sided. Later, and at premium prices, they upgraded to Double Density, 160K on one side, 320K on two. I don't have any single density. Formatting an AERCO single density will result in 1/2 the disk memory and, I suspect, 1/2 the number of AERCO "TAGES" per disk.

I appreciate your typing up my 4/22 letter and look forward to seeing it in print. The only update, which I did write you about, is I now have the ZX81 EMULATOR. It's awesome to see the ZX81 & some of its programs on my QL or my work IBM. I plan to transfer some of my ZX over to allow more flexibility, i.e., using my ZX at work.

Don, the AERCO can add a new dimension to the ZX81. The ZX81 normally seems to tape both the program and its data. The AERCO disk will also do so. However you can also, like a more sophisticated computer, save just the data. The information & printouts I sent with my first disk transmittal provides that information.

If you have patience & send me MasterScript, I may be able to get it to work for you from the AERCO, provided its load and save commands (for the cassette) are in BASIC. I may also get it to save data separately.

I do not plan to upgrade the single sided system to double

sided as the drives work well & by flipping the disks, I still get double sided.

The AEMCO & CAI stringy floppy coexist via a manual switch in & out. Crude, but quite effective. The CAI stringy is better than the cassette. However, the floppy is much better (faster & reliable) than either.

The CAI stringy saves programs & data separately ONLY. It also files in serial "pages" 1, 2, & 3 etc. You can add one like 4, but not reuse an earlier one without reusing it up. Sort of like saving multiply files on a cassette.

I have not terminated my T88i bus, but am aware of it. I did "terminate" my keyboard bus to allow for reliable operation of the remote keyboard.

I appreciate all of your information, LONG FORWARD to further correspondence and to reading your articles. Hopefully, my personal time will increase & I'll get more time soon to use my computers, pursue my writings, & to just enjoy life.

Mort Winstock
1150 Windermere DR
POB PA 15218-1144

James E. Caldwell wrote: I had been given your address from a friend who had told me one of his TIMEX 1000 computers and he told me you have a Newsletter for the TIMEX as well as a possible source of software and other materials for the Times COMPUTERS. If you could get back to me with some information about your newsletter as soon as possible I would be grateful. I am very anxious to get any information about my new addition to my computer collection.

JAMES E. CALDWELL JR.
125 MARK STREET
APARTMENT # 3-B-1 3
WILLSDALE, MI 49242-1115

MR. MADARIS writes: In the last newsletter (Vol 1 No. 4) INPUT/OUTPUT had an article about User Groups inviting people in their area to join. Prior to this, while discussing a software purchase with Mr. Peter Sale, he mentioned that I should find a local users group to join. When I told him I had not found one in the southeastern area with a newsletter, he invited me to join the NEW ENGLAND SINCLAIR QL USERS GROUP (NEQLUG).

I joined the group and received some back issues of the newsletter and the groups 2 disks library. Having just joined, I am already very pleased with what is on the disks. One of them is full (1440 sectors).

The point I am trying to convey is: If you are out there alone, as I was, find a user group. You don't need to wait until they find you. Pick out one you see mentioned in T/EMUC or UPDATE and join. It really will not matter how far they are. The newsletters and their libraries are enough. As the saying goes "USE IT OR LOSE IT!"

The Directory to Printer program for the QL in that issue is a good one. An alternative for those with T82 is to use DIR/PRN. This will send the directory of the default device to serial. Note the back slash character (\) is used. For several T82 commands, it will open and close channels or files. WDIR, WSTAT, and STAT work in the same manner. Set the default device with DATA,USE Flp2, and set the printer buffer up with PRN USE. These should be included in your boot up Boot. If you wish to send the device directory to a file, you only have to use DIR\device\name filename (ex. DIR\RAM1 myfile). No opening or closing to do. It will print the directory to a file in the same way as to the printer (as imported into Quill). This is a good way to get hard copies of your directories (Disk or Adv).

You guys keep up the good work-

BOB MERRILL
c/o 1 BOX 1497
TRAFFORD, AL 35173-9498
Tele: (205) 681-5751

Gill Parrish writes: Dear Bob, I don't think I've written since March (but then again you haven't written since February!), so this is just an "I'm still alive and living in Tulsa" letter.

I told you last time that Bob Sawyer had contacted me, and told me he had located a "Zebra" board and equipped it with a Spectrum ROM to work on my T82000 cassette system. It did not elude me until later how perfect his timing turned out to be. My wife, son and I happened to have a trip scheduled to Scotland within a week or two. Obviously, the United Kingdom is the Spectrum capital of the world, but I never thought about looking for Spectrum items until I was told by T82000 was about to become a "Spectrum compatible".

So, I had the opportunity to buy a couple of Spectrum packages: one was a collection of four games which had recently been marketed separately, and the other was a mega - collection of thirty such games including Becker, Ghostbusters, EnduroRacer, Mazeape, etc. (I saw no non-game software for the Spectrum in any shops, except for one vendor having a single copy of Roward Two.) I also picked up the April copy of Your Sinclair ("YS"), which I gather is the leading Spectrum magazine. It comes with a tape of programs glued right on the front cover, and that collection also seems to include some good stuff. YS contains the ads of several vendors from which Spectrum software can be mail - ordered, if one is willing to loose the extra postage and handling charges (in some cases an additional 2.50 British Pound - about \$4.00 -- per tape to get the stuff to the U. S.) A

subscription to YS is also available but is similarly expensive for the U. S. Folks: the normal 26.00 Pound subscription price (which does at least include the monthly tapes) jumps to \$8.85 Pounds for citizens of other EC countries, and then to \$3.05 Pounds (about \$93.00) for U. S. readers! That's a tad more than I want to incur, especially for a British magazine I frankly find hard to decipher at times (so many "in" jokes and other cultural oddities).

If you might be interested in ordering something from YS and need a copy of the ads, let me know. And are you interested in any of this tape - based Spectrum software? (T82000 ROM.)

I picked up a Kempton compatible joystick interface too, fortunately. I think you had warned me previously about needing such an adapter to work with Spectrum stuff (without a disk interface); Bob's package contained a similar warning, but it didn't arrive until after I left. Anyway, I passed up a Kempton adapter in one store, but something in my memory kept nagging at me, and I later picked up one in another town.

For what it was worth, I ended up writing an article for the Toronto group's newsletter about the Spectrum scene in Great Britain. I had never written one for Toronto (while I had already written one for your newsletter), so I thought I needed to provide one as a good Club member.

I thought originally when I got home and opened Bob's package that I had a problem. I very much liked the design of the Zebra board, since it disappeared into my unused game port and did not detract from the looks of the unit. However, Bob had indicated the command to go into Spectrum mode was "OUT 344,2" but all that yielded was an "Integer out of range" error. I tried removing

and re-inserting the board, cleaning the contacts, etc. but the error message remained constant. I wondered if my unit had a defective game port. I've never used that port for anything (only recently did I see a Texas Command Cartridge, which was the first proof I had Texas really made any), and I had no way of testing it. Then I wondered if Bob transpiled a digit in the command or something. Playing with the "244" number produced no meaningful result, so I tried changing the ".2" to a ".1". That also produced nothing usable so on a whim I tried ".3" -- and that did the trick. The command "OUT 244,3" put the computer into Spectrum mode (complete with Spectrum copyright screen). I was then able to try some Spectrum software and the board seemed to work fine. [I can't believe I did that! Sorry! Ed.]

Separately, I bought a printer interface cable from Byte - Back: I gather that company is liquidating remaining inventory, so I only paid half price for it. They want the software to get the cable to work with my TS2088 (and it does indeed work fine). But I wonder if there is separate software that would get it to work with my TS2080s?

I'm glad the organization is doing so well. T/S users are going to need a strong central organization in the next few years, so I'm glad the foundation is being built now!

William T. Sawicki
Route 1, Box 705
Boggs, OR 94421

Joseph Ruppella writes: Many thanks for sending the copies of the newsletter with my article on the BYTE-BACK modem. It is great to see that you and others involved in the group are still serving the needs of us TIMEX/Sinclair dieters! Keep up the good work! I wish you and all our T/S friends a Happy Thanksgiving and a Merry Christmas! :)

Joseph Ruppella
2434 E. MORGENTHAU ST
BALTIMORE MD 21205

NEWS ITEMS

Dayton ComputerFest 1992
by Donald S. Lambert

Friday 08 28 1992 at 11:27 AM
(Indiana time) I backed out of the driveway and left for the Dayton ComputerFest. There is a different route I could have taken and missed all traffic in Ft. Wayne but with my tendency to get lost I did not take it so at the end of the first hour I had traveled only 40 miles. The route I took was to go south on I-69 to Highway 30 East and to take that to I-75 south. After entering I-75 I found a posted 12 mile stretch of the interstate that had one lane of traffic but what traffic there was traveled fairly briskly until there were two cars ahead of me that kept varying from 45 to 60 miles an hour. But luckily they exited before the end of the construction and then traffic was moving along briskly. It was 169 miles to the Red Roof from my house.

Finding the Red Roof Inn was very easy since it is the first exit south of I-70 or exit 80. Besides you can see the motel. I arrived at 3:50 PM Indiana time or 3:50 Dayton time and checked in and returned to the office to find out if any others had arrived but no luck. I walked around a little and returned past the motel office and there was rapping on the glass and there was Paul Holmgren, from that moment on I was T/Sing until I left the Bank Arena on Sunday.

Frank Davis had not arrived so Paul and I visited and Bill Angel had come following Paul in his pickup. When Frank and Carol Davis arrived they discussed going over and setting up and we went out to dinner. We went to Bob Evans's and those that ate in our group

were Paul Holmgren, Carol and Frank Davis, Bill Angel, and myself. Of course there was a lot of talk and it was decided to get together for breakfast and meet at Frank and Carol's room at 7:35 Dayton time. (It did not change my watch from Indiana time)

After they went to Hare Arena I went back to the office and the clerk did read off all the names of those that had reservations but had not arrived.

But that information was after the desk girl took care of a college age girl that came in looking for a wedding party that she was trying to find so she could go to the rehearsal supper. She was starting to get suspicious and said "If it isn't this weekend I will shoot myself. I drove for 4 hours from West Virginia." The desk clerk helped find the right date, was two weeks later, and the girl left. I asked her if she was going to keep it a secret. "No way am I going to tell anyone!" she said.

Later I recognized the van that John Pederson used to drive his brother, Bill, around. I visited with them until Frank, Carol, Paul and Bill returned from setting up. Then we all visited.

At breakfast Saturday morning, we had quite a gang at Bob Evans and those that I got names of were: Paul Holmgren, Carol and Frank Davis, Bill Angel, John and Bill Pederson, Bill Schultes, Bill Heberlein, and myself. Much talk and lots of eating.

We made up a convoy going to the fest and Paul Holmgren led the way followed by Bill Angel, then the Pedersons, then myself and then Frank and Carol Davis. I was almost barred from entering early to get up the CATUG and T/SNUG table since my ticket was the wrong color but fast talk and confusion got me in.

The table line up in the T/S area was from left to right: the CATUG and T/SNUG table which I presided over then a narrow passage way to see to get behind the tables and then Frank and Carol. Then it was Paul Holmgren and then Bill Angel and then the last table which was the SNUG table manned by Bill Heberlein and Bill Schultes. The passage way made a good spot for Bill Pederson to sit.

I got set up and after I got the BIOS greeting bulletin Steve Cooper and Bob Sawyer made up going on my monitor Paul brought over his color monitor, mine was a green screen, and the BIOS program ran in colour with a nice repeating display. One IBM type wanted a copy of the program until he found out it was for the T/SNUGS. We had a few new comers to the T/S computers and a few that were possibly interested in getting back into it again.

When things got slow I files marketed. First the T/S tables and then the regular files market. I found a few bargains. I bought a Laser FCI, which is a dictionary with memory and a total of ten features from the main menu. There is 32K of memory available for all the features. It has a serial port for uploading and the software for an IBM to capture the files. Frank Davis has a Comports which is the same machine but under a different name and he has used it to upload to a T/SNUGS. Also the FCI has a cassette port but it will only work if you use a stereo plug with a mono jack to plug in the mono cable to the tape recorder. Currently it is powered by four AA batteries but plan to go to a 110 volt adapter. I also bought a 3.5 drive and got the two connectors to enable me to use 5.25 power supply and ribbon cables. I tested it and it seems to work, at least it will FORMAT 80 tracks and the total cost was \$13.80 including the adapter connectors.

Since Paul lead us by a different route and I did not have a map with me we again conveyed back to the motel. Distance is around six miles. Frank had made prior arrangements for all T/Bers to meet for dinner.

Bill Pederson showed off his first step to get his TS2068 system going and that is using an IBM case to house the disk drives and power supply and mother board. Frank Davis is working on a board for the interface.

We met and this time we went to Hendersons for dinner. The party that went Saturday evening was Gene Wilson, Dave Bennett, Keith Watson, Mark Steuber, Steve Spaulding, John Impellitteri, Dennis Denehat, Don Waltesman, John Kadosh, Carol and Frank Davis, Bill Angel, Paul Holmgren, Bill and John Pederson, Mel LaVerne, Tim Swenson, Marty Quastano, Gary Ganger and wife, Paul Schenk, Ted Koyneck and myself. Much talk and confusion, the waitresses got lost on who got what but we all ate.

We moved here and there after supper in our discussions, Carol tracked me down to tell me I had a phone call. It was Jay Shepard in Iowa wanting to know how the fest was and asking about a place of hardware (he & a video camera) I hadn't seen. Sunday we went to breakfast at the Cracker Barrel and in attendance was Ted Koyneck, Gene Wilson, Toby Radcliff (he was in a movie), Bill Angel, Neil Elam, Don Kadosh, Carol and Frank Davis and myself.

The following signed the register at the CATS and T/BERS table: Carl Moller, Mel LaVerne, Don Kadosh, Tim Swenson, M. A. Quastano, Doug Gillespie, Rene Louneau, Harold E. Krum, Kip Reynolds, Jeff Taylor & son Alex Taylor, Randy E. Randall, Toby Radcliff, Jack Fetter, Buford Scheber, Edward Miller, Dave Bennett, Les Brown, Don Waltesman, John J.

Impellitteri, Dennis Denehat, Edward Gase, Dean King, Frank and Carol Davis, Keith Watson.

On the T/SHUC side, I got two T/SHUC members and their address changes and will supply the names to those that are working on the membership list.

While the quantity of members coming through was less than last year they seemed to be more dedicated. Several expressed interest in the SHUTTLE and BILL capabilities for the QL and IBM computers. Mary said that the best feature of the T/S computers was the user friendly programming abilities.

There was not the hardware and software or even the hard copy that was available at prior fests, but there is still all of that available but not in the quantity of the earlier years. Nor has all new stuff dried up. There are a few hardy souls still programming new stuff and improving the earlier stuff. And there are a few of us that will hang onto our Classic T/S computers until the last moment. A lot of hard copy is available from the various users groups.

Was the trip worth it? A definite yes! I learned more, made some new contacts and renewed old ones. If there is a T/S computerfest next year I plan to attend. I will start to lay back some money for expenses. Let's face it, the T/Bers are fewer but they are more dedicated than the other users groups. And most important to me, they seem to be far more friendly and helpful than the other computer type users groups.

In closing - I may have missed a name and even as had if not worse misspelled a name. And more happened than I was not involved in: I did try to recount the high spots of what happened. 8/0

ITEMS AVAILABLE FROM T5H00

It has come to our attention that some Larkem Users are using something less than Version 3 firmware. T5H00 will supply updated EPROMs, SYSTEM DISKS, and ROMS.

If you have a mismatch between your Larkem ROM EPROM and your Western Digital Controller chip, we will send you the correct one for free on behalf of our friends Rod Green of RSC and Larry Henry of Larkem. You should be using LS EPROMs with WD1770 controller chips or LS EPROMs with WD1772 controller chips. Check it out! Call in requests to Bob Sawyer at 516-516-8058 516-837-7357

SPECIAL DEALS AND BUYS

Mr. Marc (Gusir A. Paschoon's new endeavor) announces the availability of all Times or QFPA (Programmable Array Logic) chips. If interested, call him evenings at 708-433-1879.

LogiCall Integrated Software Assemble easy operating system for LK00S in both T52048 and Spectrum modes. Includes LogiCall 5.0 TAPW000 TWO V2.7, VO-CALL V3.3, VO-FILE V1.2 and MTERMS2 Drivers modified for LogiCall. DISKS.8) TAP68.8) ascpat.21 ERASER.BT (tape header reader by Sasir Paschoon) F00007.8, M006.8) and more all on 2 800b disks for \$5. You must specify your LK-00S EPROM version. If you already have a copy you are encouraged to distribute copies to other Larkem LK-00S users for as you see fit the price we are not in the business of making money on it, just making Larkem's LK-00S even better!

If you are a Larkem LK-00S owner and would like a SPECTRUM V2 kit for your system, we will supply an EPROM, socket and T4MUT32 for \$12 which includes shipping and handling. The install instructions are in your Larkem manual. We shall not be responsible for your install job. ASACH owners need

only the SPECTRUM EPROM for \$10 \$10 is forwarded to Larkem.

So you like to Fly? The T47 Flight Simulator for Spectrum by Derek Ashton of DACT sold over 40K copies in 1986. Requires Spectrum Emulator. At this time supplied on Larkem 5200 disk only for \$10 which goes to Derek Ashton, now working at MICROBIA with Bob Sawyer. Call in requests to Bob at 516-516-8058 516-837-7357

LIBRARY

TIMEX/SINCLAIR
PUBLIC DOMAIN LIBRARY
AVAILABLE AS OF 31 JUNE 1991
Contact Bob Sawyer
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ARTICLES

The BYTE-BACK MD-68 MODem
by Bob Sawyer

The BYTE-BACK MD-68 Modem beat Anchor's NESTINGE 2880 to the market place and therefore was the first modem used on my T52048. It has some interesting features not found on the T52048. The ability to receive BASIC programs from non-T52048 computers in such a way as to allow the editing of these programs into working T52048 tokenized programs is the most outstanding feature of this modem package.

This unique ability is provided by SpectraSoft's SpectraTERM V1.3 software. When the receive buffer is open, the REM transfer mode is in effect, and a line number between 1 and 255 along with a REM token is placed in front of each downloaded line. One need only edit each line starting at the bottom and the program can be turned into T52048 BASIC. This one feature alone made it an important device to have on hand in my computer room.

A built-in RS232 port for the printer or even another (read faster) modem, is another feature of the BYTE-BACK modem. One day in the future I might try to use the serial port to run a Terminal Mode Controller for Amateur Radio Packet communications. The software for printer operation from that port is not provided.

The ad for this modem can be found elsewhere in this newsletter. Make sure an offer if you don't have one of these fine modem packages.

Below is a LanXas driver for SpectraTRM.

SPECTRA.BI

```
10 CLEAR VAL "61187": LET B=C
20 IF "D": PRINT "SpectraTRM 1.1
30 PRINT "© 1984, SpectraSoft
40 PRINT "Licensed to Byte-Ja
50 PRINT ", "Program loading
60 RANDOMIZE USR H: LOAD "spe
tra.CI"CODE
110 GOS : PRINT "*****
*****"Q: EXIT
120 ENTER SpectraTRM120 R
RETURN TO SpectraTRM120) CLEAR
R ENTER & RETURN 120) SAVE S
pectraTRM120) STOP AND ENTER
BASEC120)*****
*****" RANDOMIZE USR 61
184"TAB 43," CLEAR BUFFER & R
TURN 43"RANDOMIZE USR 61187",
TAB 43"RANDOMIZE USR 61187",
120 INPUT "Enter selection >":
A
130 IF A=6 THEN GO TO VAL"118"
140 GO TO VAL "200+(10*A)"
150 GO TO 9998
160 RANDOMIZE USR VAL "61187"
170 GO TO 118
180 RANDOMIZE USR VAL "61184"
190 GO TO 118
200 GO TO 9998
210 STOP : GO TO 110
9998 RANDOMIZE USR H: SAVE "SPE
TRA.BI" LIKE FI
9993 RANDOMIZE USR H: SAVE
"spectra.CI"CODE VAL "61184",VAL
"1241"
9994 GO TO 110
9998 RANDOMIZE USR H: LOAD "L B
1"
```

MINERAL OIL and the PRINTER RIBBON by Abed Sabale

It seems that every time I am ready to use my printer, the printing looks faded: time for new ribbon: NOT SO. The printer is sitting idle and the ink is drying out especially in the winter months.

A few years ago George Chambers in the Link-Link W/L wrote a note on inkling the ribbon; a couple of drops of printer ribbon ink on the ribbon and re-wind the ribbon manually or by moving the print head from one end to the other while the printer is ON. I got my ink from SWS Enterprises but it is also available from office supply houses. That worked fine and the printing was darker than a "new" ribbon.

But that also dried out in a while; the next step was to go to the Encyclopedia Britannica and find out what printing houses use for an ink recipe: for quality printing such as magazines with photos they add either mineral oil or glycerine. My medicine cabinet included both. I used a couple of drops of mineral oil because it is a more stable chemical and also is a lubricant for the print head pins for longevity.

If you are a tinkerer like me, pop the ribbon cartridge open and put the oil and/or ink on the foam rubber wheel inside. Now I can print all day and once a month and I get the darkest printing I ever had.

MINERAL OIL and the EDGE CONNECTION by Bob Sawyer

Before Abed joined the CATUG, we ran an article on how the Motorola Sinclair Users group kept their 2300 and 2301 machines going with no crashes while others in the U.S. were experiencing crashes. We tried

to tell the others through newsletters but couldn't get type print. We took advantage of the situation by buying up the machines of disgruntled owners and applied high viscosity mineral oil to the connectors between the IX machine and its RAM pack. The very same thing we at Motorola used on the connectors of our television and communication equipment. The result was no more crashes!

When using high viscosity mineral oil on your equipment, make sure you get it only on the P.C. board and connector, not anywhere near the rubber bubble pad of your keyboard as it will ruin it, causing any rubber to swell and become distorted!

Where do you obtain high viscosity mineral oil? From your drug store, it can be found with the other laxatives!

RESETTING TRACK 0 AND OTHER TWEAKING. by Don Lambert

I wrote this originally a couple years ago and a recent conversation with Bob Seeger discussing resetting track 0 on a drive brought this to mind. While we both have successfully reset a Tandon TM 102-2A drive to track 0 again we both used different methods. While I haven't tried Bob's method I have heard/read of the set screw that locks the head assembly to the track stepping mechanism loosening which leads me to believe that his method might be best to use since you are moving the head back where it had been originally.

If a drive will POWER a disk and SAVE a file to it and can LOAD the files but no other drive will LOAD the files and thus drive cannot load other drives' files then either track 0 is off or else speed is off. In early days of computing some computer manufacturers deliberately set either track 0 or speed off so that you had to

use their repair services and had to keep disk drives from them.) All drive resetting methods require the disk drive power supply, a few tools and a working computer and disk drive interface.

*** One word of CAUTION ***
IF THERE IS NO TERMINATION RESISTOR IN THE SOCKET LOCATED BETWEEN THE TWO 2.0 IN LINE LEFT TO RIGHT WITH TP13 NOT ONLY WILL IT BE IMPOSSIBLE TO SET SPEED BUT ALSO IMPOSSIBLE TO SET THE TRACKING.

I had a drive that just seemed to want to vary the speed and also would not take a track adjustment until I realized that the resistor was missing.

* Another word of CAUTION *
It might be safer to wrap masking tape on the screw driver shaft to insulate it. Also it is best to have a disk in the drive all the time that the spindle motor is running to put a load on it like when it is in use.

The first thing I did was check and reset the speed of the drive motor. For that you will need a fluorescent light and a small blade screwdriver to turn the adjustment screw in the potentiometer on the board on the end of the drive and you will need a jumper, a piece of insulated wire with a flea clip on each end to go between the square pins on the top board. With the disk drive on the table top side up and the drive door facing you, you will find a square pin located just to the right of the left hand board mounting screw by 3/16 of an inch and about a 1/16 of an inch closer to you than the screw and labeled TP13 (TP = test point) with the letters upside down. Fasten one end of the flea wire with the flea clip to the square pin. Up at the other end of the board is a row of connectors and the one labeled it will be directly in line with the square pin TP13 which is 5/8 inch this side of the connector. Fasten the other end of the wire using the flea

clip to TP13 square pin. The purpose of the wire is to connect the disk drive motor to turn on when you turn on the power.

Speed is best set with a disk in the drive. I set the speed before I connected the interface cable to the drive. Now with the drive power cord plugged into the disk drive turn the disk drive on its side to expose the flywheel of the disk spindle with the paper and the bars printed on it exposed to the fluorescent light and watch the outer ring (60 cycles) and if the bars are seen to go either clockwise or counterclockwise then turn the screw in the end of the potentiometer on the back board (the motor drive board). The bars may waver but unless there is a definite movement in either direction the drive speed is correct. Any movement should be seen in fifteen or twenty seconds. When the speed checks right remove the jumper between TP10 and TP13.

To reset the track stopping mechanism if the drive will not read track 0 (the directory of files) you will need a larger screw driver (insulate the shaft of the screw driver with tape) and an allen wrench size .189 or 7/64 of an inch. Turn the drive over and you will see down near the disk flywheel a pair of allen screws which are sealed on the side with green sealing material. Loosen the two screws and turn the drive back right side up and on the back of the drive above the disk motor board is a metal projection that has a slotted screw head in an oblong opening and with the drive door facing you the slotted screw will be on the right side of the metal projection. To the left and slightly towards you is another allen headed screw also with the green goop on the side of the head. You might make a mark on the plate next to the screw the location of the screwdriver slot for reference. Loosen that allen screw and test with the screw driver to see if the turning the screw moves the

metal a trifle. The screw only has about a 180 degree adjustment (some drives will have 360 degree adjustment). I had the best luck adjusting by turning the screw to the most counterclockwise position.

The reason to insulate the screwdriver is to prevent touching the bare pins that stick out above the adjusting screw.

Now with the interface cable plugged in and the drive power supply plugged in select a disk **SAVED** on a good drive (be sure to use a copy in case something happens to the disk) and first try to CAT the disk (I was using a TR8048 and a Larken interface) when you get an error with the metal slide and just turn the screw enough clockwise so that you see it barely move. Then once more re-try the CAT and repeat until suddenly the entire directory is listed as it should. I usually made one or two very slight more adjustments and then tried to LOAD a file on the first of the directory and then one on the last of the directory. If both had **LOADED** on a good drive and they **LOAD** on this one then power down and tighten the three allen screws and then re-try the CAT and the first program and the last program. If they **LOAD** you have it reset. With the Larken and the TR8048 on failure to CAT you will get a CRC error and then garbage for the directory. Then as you get close to the track with the adjustments you might see one or two of the first files named then garbage, then suddenly all files appear. While the drives are rather mysterious (to me) in how they work it was rather more mechanical to make the adjustments. Of course other defects are handled differently.

I had one drive in which the track 0 switch was off. What it did was give a series of thumping sounds as it tried to read track 0. With the back of the drive facing you is the

projection that holds the track 0 adjusting mechanism and to the right of that and slightly above it is a slotted screw with green goop on it. I adjusted that and the drive stopped clunking and loaded the directory. However, on another drive that did not help. I removed the spindle motor and then I could adjust the micro switch located where the track stopping mechanism could actuate it. Whether that adjustment was a slide or not the drive could be reset on track 0 and it worked. While all the Tandon TM 100-2A drives look alike at a distance, close examination does reveal differences. I have one Tandon with a soldered in gang DIP switch in place of the DIP socket normally used for the jumpers for drive selection. Also, I have a drive labeled as a Texas Peripheral Co. but they used a Tandon frame including the TANDON name in the casting. But the other parts are not similar to the Tandon.

I now turn you over to Bob:

Don mentioned that I fixed a drive with the stopping motor set screw only but I wish to tell you that it took hours to accomplish. These drives probably fail in the first place because the screw that holds the stopping mechanism to the shaft of the stopping motor was too loose. It should be tightened first.

Don mentioned in his last paragraph that he heard the drive make a 'series of thumping sounds'. This sound can be heard if the head tries to advance past track 43 or if it fails to activate the end of travel microswitch while seeking track 0. There are programs written with a bug that tries to send the heads to track 249. Since the drive can only travel to track 63, the head mechanism hangs until you turn off the system. If the head carriage, trying to travel past track 0, doesn't activate the end of travel microswitch to let the system know that it

has arrived, the head carriage will hang until you turn off the system. These two circumstances will cause the stopping motor shaft to slip inside the head spindle if the set screw is the least bit loose.

The purpose of the screw Don mentions in his last paragraph is to push the head off the microswitch and back onto track 0. This screw is set to be just about of resting against the head carriage when it is over track 0.

Before loosening the three screws that hold the stopping mechanism in place, remove the top PC board and tighten the set screw on the stopping motor shaft. Then proceed as Don describes.

If you have a oscilloscope or capacitively coupled AC voltmeter handy, you may wish to make a final adjustment of the track setting screw in the following manner. Prepare a disk using George Chambers' utilities that has been formatted and saved on a known good drive. Save a program on track 20 (middle track of a 40 track drive) that is about 5000 bytes long and loads itself continuously.

Place either a capacitively coupled AC voltmeter or oscilloscope between TPI and ground. Load in the program and turn the track setting screw for maximum output on the AC voltmeter or both maximum amplitude and best symmetry on the oscilloscope. You will note that the signal level goes up and down. Use the lower level signal to set the screw for maximum as it is the signal from track 20. Tighten the three set screw down and check that the setting didn't move.

If you do a VERIFY while watching the AC voltmeter or the oscilloscope you will notice that the output level goes down considerably as the heads travel to track 40, this is normal. It has to do with

the fact that the data passing the head at track 8) is traveling so much slower than the data passing the head at track 4. As ADF circuit levels the output signal before it leaves the drive.

Thanks to MARK Farnell of the Riverside Color Computer Club of Illinois for the above education. ---Bob Seeger---

WRITING MORE EFFICIENTLY BY BILL HAMMER

I confess, I am a ZX81/TS1000 user still. A real survivor. Although I have promised myself to program only (or mainly) on the ZX81/TS1000 in machine language, BASIC still is my main language on this computer. The amazing thing is that there are still things to discover in BASIC programming for the ZX81/TS1000.

The writing of a sorting routine for the ZX81 usually means the bubble sort or at least the flagged bubble sort as given in the book by Morse, et al., "THE ESSENTIAL GUIDE TO TRS80/SINCLAIR HOME COMPUTERS", a ZX81 and TS1000 BASIC programmer's touchstone for comforting solutions. Well, Byte magazine in their April 1981 issue published an improved version of the flagged bubble sort and with a little adaptation (from True BASIC to ZX81 BASIC), it was possible to test it and find that it did indeed run faster than the flagged bubble sort. I suspect it is even faster on much bigger arrays than I tested its sorting on.

Another thing that has helped in the saving of RAM in ZX81/TS1000 programs is the use of flags as in the flagged bubble sort, as either 0 or not 0 (that is 1) as the two possibilities, like so:

```
Instead of:
100 IF FLAG=0 THEN GOTO 1000
110 IF FLAG=1 THEN GOTO 2000
```

```
use:
100 IF NOT FLAG THEN GOTO 1000
110 IF FLAG THEN GOTO 2000
```

These operators can be combined with others in compound conditions as in:

```
120 IF PG AND X=1 THEN GOTO 3000.
```

Speaking of conditions after IF, another discovery of a year or so ago was that the ZX81/TS1000 can take:

```
200 IF X=1 THEN IF A=2 OR A=4
THEN GOTO 700
```

This is equivalent to something that the ZX81 BASIC does not seem to like to accept:

```
200 IF X=1 AND (A=2 OR A=4)
THEN GOTO 700.
```

One of the problems with the ZX81/TS1000 and most BASIC interpreter other than that of the QL (SuperBASIC) is that if you put a loop deep in a program, after a lot of other statements, then it executes more slowly. However, a simple FORK and some fiddling with its position in the program listing will allow you to get a GOTO equivalent that is almost as fast as a GOTO when used at the beginning of a ZX81/TS1000 BASIC program.

There is little more to explain than that. But the FORK in effect FORKS the last byte of the NEXT-LINE ZX81/TS1000 system variable. It is a local GOTO, that can go as far away as about 255 bytes in the program listing only, but since all fast loops can't be put at the start of your BASIC program, this will help speed up the ones that can't be given a high enough priority to be put there. Maybe a sort of search routine might fall into that category, or simply a variable array initialization routine. One variable initialization routine that saves RAM is:

```
Instead of:
8000 LET M$="-----"
-----"
8010 LET M$="XXXXXXXXXXXXXXXXXX"
XXXXXXXXXXXX"
```

0020 LET Y5="

```
USE:
0030 LET S5=" "
0040 LET X5="00"
0050 LET Y5=" "
0060 FOR M=1 TO 4
0070 LET S5=S5+S5
0080 LET X5=X5+X5
0090 LET Y5=Y5+Y5
0099 NEXT M
```

Initializing the graphic strings is done by starting them at a value and then doubling their length. This runs infinitely quicker than the following:

0040 LET S5=S5+" " through a loop 32 times! 0/0.

ADS

To put an AD in the Computer related section of the BBS, put a file in your account with the filename filetype= COMPTRK.ADS ' ' ! Our ADS are free ' ' !

Your ADS appear in FOUR different newsletters!

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FOR SALE: ON 020909

I have acquired more B&B goodies to pass on to you all since my last ad:

* Times and Sinclair Hardware *

(2) TS2068
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(1) Androids Cartridge
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(3) TS-2016 (16K Rampack)
(2) TS1000 Minky Board
(1) Larken WWS for TS1000

***** continued next page *****

 * T32068 Software *

Fighter Pilot
 HScript
 Flight Simulator
 Dashboard T32068
 Randisk
 Textwriter 3000 Plus
 Pro/File T32068
 Not-S T32068
 Menu-T
 Loader V

 * Spectrum Software *

Super Bowl
 Machine Code Tutor
 Highway Encounter
 The Flying Formula
 Nias
 Spectrum-64
 Expert
 G3 Spy
 Softaid (10 Programs)
 Cassette 50 (36 Programs)

 * T3-1686/CM81 Software *

Word Sync
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 * QL Software & Manuals *

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